

# FLUORINE-CONTAINING TRICARBOXYLIC ACID-TYPE AMPHOTERIC COMPOUND AND PREPARATION

Patent number: JP58201752

Publication date: 1983-11-24

Inventor: KAMEI MASAYUKI; others: 02

Applicant: DAINIPPON INK KAGAKU KOGYO KK; others: 01

Classification:

- international: C07C103/38; C07C102/00; C07C103/44; C07C103/78; C07C103/82; C07C143/74; C07C143/

- european:

Application number: JP19820083260 19820519

Priority number(s):

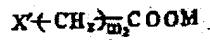
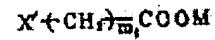
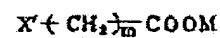
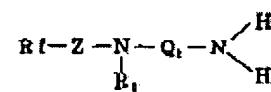
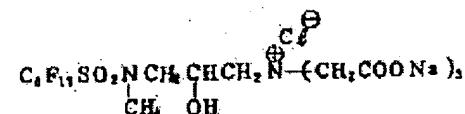
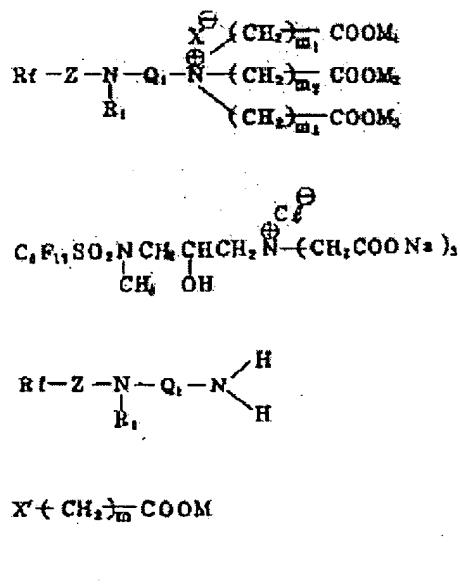
## Abstract of JP58201752

NEW MATERIAL: The compound of formula I (Rf is 3-18C fluorinated aliphatic group; Z is -SO2-, -CO-, -(CH2)l-SO2- (l is 1-6), etc.; R1 is H, -CH2CH2OH, 1-12C alkyl, etc.; Q1 is -(CH2)n- (n is 2-6), etc.; X is inorganic or organic anion; m1-m3 are 1-3; M1-M3 are H, or inorganic or organic cation).

EXAMPLE: The compound of formula II.

USE: A surface active agent having excellent surface tension lowering activity, frothing property, resistance to hard water, and solubility.

PROCESS: The compound of formula I wherein X is Cl, Br or I can be prepared by reacting the compound of formula III with the compound of formula IV (X' is Cl, Br or I) in the presence of a basic catalyst (in the case of m1=m2=m3) or by reacting 1mol of the compound of formula III with 2.0-2.4mol of the compound of formula V and further reacting with 1.0-1.2mol of the compound of formula VI (in the case of m1=m2 not equal to m3).



EV979440227

L9 ANSWER 14 OF 29 CAPLUS COPYRIGHT 2003 ACS on STN  
ACCESSION NUMBER: 1983:541496 CAPLUS  
DOCUMENT NUMBER: 99:141496  
TITLE: Textile finishing agents  
PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 58042682	A2	19830312	JP 1981-140555	19810907
JP 63032109	B4	19880628		

PRIORITY APPLN. INFO.: JP 1981-140555 19810907  
AB Water-repellent and oil-repellent finishing agents for textiles contain 50-99 parts polymers having polyfluoroalkyl groups and 1-50 parts siloxanes having epoxy, acryloyl, methacryloyl, and/or amino groups. Thus, a 40:60 cotton-polyester blend fabric was immersed in an aq. \*\*\*emulsion\*\*\* contg. 3% copolymer [ \*\*\*87302-26-9\*\*\* ] (prepd. from 4,4,5,5,6,6,7,7,8,9,9,9-dodecafluoro-8-trifluoromethylonyl \*\*\*acrylate\*\*\* 20, Et \*\*\*acrylate\*\*\* 5, and diacetone acrylamide 5g) and 1% of 3-glycidyloxypropyl group-contg. \*\*\*siloxane\*\*\*, squeezed, dried 2 min at 110.degree., and heated 2 min at 170.degree.. The fabric had water repellency (JIS L 1079) 100, oil repellency (3 M) 100, and good hand.

EV979440227

L9 ANSWER 13 OF 29 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1984:408672 CAPLUS

DOCUMENT NUMBER: 101:8672

TITLE: Easily dyeable soilproof fibers

PATENT ASSIGNEE(S): Unitika Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 59059977	A2	19840405	JP 1982-173391	19820929
JP 01044837	B4	19890929		

PRIORITY APPLN. INFO.: JP 1982-173391 19820929

AB Spun synthetic fibers finished with lubricant compns. contg. a fluorocarbon and a cationic \*\*\*surfactant\*\*\* and drawn are soil-resistant and have good dyeability. Thus, nylon 6 was melt spun and coated (15%) with 10% lubricant \*\*\*emulsion\*\*\* contg. 7% 70:25:3:2 CH<sub>2</sub>:CHCO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>(CF<sub>2</sub>)<sub>6</sub>CF(CF<sub>3</sub>)<sub>2</sub>-vinyl chloride-2-chloroethyl vinyl ether-2-hydroxyethyl \*\*\*acrylate\*\*\* copolymer [ \*\*\*90571-06-5\*\*\* ] and 1% dodecyltrimethylammonium chloride [112-00-5]. The coated fibers were drawn 250% at 90.degree. and heat-treated 1 s at 150.degree., and a woven fabric was prep. and dyed with a liquor contg. 2% (on fiber wt.) Nylomine Blue AG for 20 min at 80.degree. to give a water-resistant soil-resistant fabric with good color yield.

EV979440227

L9 ANSWER 12 OF 29 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1986:554811 CAPLUS

DOCUMENT NUMBER: 105:154811

TITLE: Film-forming composition and film formation

INVENTOR(S): Hashimoto, Yutaka; Kamei, Masayuki

PATENT ASSIGNEE(S): Dainippon Ink and Chemicals, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61069813	A2	19860410	JP 1984-190507	19840913
JP 05010393	B4	19930209		
PRIORITY APPLN. INFO.:			JP 1984-190507	19840913
GI				

/ Structure 2 in file .gra /

AB Film-forming comps. polymerizable with UV light or electron beams

comprise 1 part R<sub>2</sub>Z1O<sub>2</sub>CCR1:CH<sub>2</sub> [R = C<sub>4</sub>-20 perfluoroalkyl; Z = SO<sub>2</sub>NR<sub>2</sub>, CONR<sub>2</sub>, CH<sub>2</sub>CH<sub>2</sub>SO<sub>2</sub>NR<sub>2</sub>, O-p-C<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>NR<sub>2</sub>, O-p-C<sub>6</sub>H<sub>4</sub>CONR<sub>2</sub>,

CH<sub>2</sub>CH<sub>2</sub>SCH<sub>2</sub>CH<sub>2</sub>CONR<sub>2</sub>,

CH<sub>2</sub>CH<sub>2</sub>NR<sub>2</sub>, CH<sub>2</sub>CHMeNR<sub>2</sub>, (CH<sub>2</sub>)<sub>3</sub>NR<sub>2</sub>; R<sub>1</sub> = H, Me, halo; R<sub>2</sub> = H, C<sub>1</sub>-12 alkyl, ether group-contg. alkyl; a = 0, 1; Z<sub>1</sub> = (CH<sub>2</sub>)<sub>n</sub>; n = 2-4], 4-10,000 parts hydrocarbyl acrylates, and 0.005-5% (per total compn.) oil-sol. F-contg. surfactants, giving films with good hardness and corrosion resistance.

Thus, a mixt. of C<sub>8</sub>F<sub>17</sub>SO<sub>2</sub>NETCH<sub>2</sub>CH<sub>2</sub>O<sub>2</sub>CCH:CH<sub>2</sub> (I) 0.050,

N,N',N"-tris(2-hydroxyethyl)isocyanurate triacrylate 96.945, 3:7

C<sub>8</sub>F<sub>17</sub>SO<sub>2</sub>NPrCH<sub>2</sub>CH<sub>2</sub>O<sub>2</sub>CCH:CH<sub>2</sub>-H<sub>2</sub>C:CM<sub>2</sub>CO<sub>2</sub>(CH<sub>2</sub>)<sub>15</sub>CHMe<sub>2</sub> copolymer

(mol. wt.

4000) 0.005, and benzophenone 3.000 parts was coated on steel, dried, and cured in UV light to give a film with surface hardness >6H, contact angle 72.degree., and good corrosion resistance, vs. 3H, 42, and poor, resp., without I.

EV979440227

L# ANSWER 45 OF 104 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1996:205199 CAPLUS  
DN 124:269953

TI Hair preparations containing \*\*\*perfluoroalkyl\*\*\* - and  
polyoxyalkylene-modified silicones and surfactants  
IN Shinkai, Masakazu; Yamamoto, Tadashi; Kuroda, Akihiro  
PA Kanebo Ltd, Japan  
SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
------------	------	------	-----------------	------

PI	JP 08012536	A2	19960116	JP 1994-170056 19940628
	JP 3243375	B2	20020107	

PRAI JP 1994-170056 19940628

AB Hair preps. contg. and cationic \*\*\*perfluoroalkyl\*\*\* - and  
polyoxyalkylene-modified silicones and cationic surfactants and/or anionic  
surfactants, .gtoreq.1 selected from anionic, amphoteric, and nonionic  
surfactants, or polymers. The preps. show good a hair-conditioning  
effect and are mild to the skin. A shampoo contg. 3% copolymer of  
3,3,4,4,5,5,6,6,6-nonafluorohexylmethyldichlorosilane with  
CH<sub>2</sub>:CHCH<sub>2</sub>O(C<sub>2</sub>H<sub>4</sub>O)<sub>8</sub>-12H, 3 % polyoxyethylene lauryl ether, 1% lauric acid  
diethanolamide, and H<sub>2</sub>O to 100%, showed good foaming property and  
detergency, caused no degeneration of proteins and rough skin of hands,  
and texture of hair after shampooing was good.

IC ICM A61K007-075

ICS A61K007-00; A61K007-06; A61K007-08; A61K007-11

DT \*\*\*Patent\*\*\*

LA Japanese

---

EV979440227

L9 ANSWER 5 OF 29 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1996:417619 CAPLUS

DOCUMENT NUMBER: 125:60913

TITLE: Water-repellent compositions containing fluorinated  
(meth) \*\*\*acrylate\*\*\* polymers, their sprays, and  
their application by spraying

INVENTOR(S): Shimizu, Toshio; Dejima, Hiroshi; Aoyanagi, Muneo

PATENT ASSIGNEE(S): Kao Corp, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08081883	A2	19960326	JP 1994-214583	19940908
JP 3279442	B2	20020430		

PRIORITY APPLN. INFO.: JP 1994-214583 19940908

AB The title compns. which show long-lasting water-repellent properties and have no unpleasant odor contain (A) 0.1-5% copolymers of CH<sub>2</sub>:CR<sub>1</sub>CO<sub>2</sub>R<sub>2</sub> [R<sub>1</sub> = H, Me; R<sub>2</sub> = H, (aryl-substituted) linear or branched C<sub>1</sub>-22 alkyl, alkenyl, (linear or branched C<sub>1</sub>-20 alkyl- or alkenyl-substituted) aryl; C<sub>3</sub>-8 cycloalkyl], C<sub>2</sub>-3 hydroxyalkyl (meth)acrylates, and perfluoroalkyl-contg. (meth)acrylates, (B) 90-99.8% C<sub>1</sub>-3 alcs., and (C) 0.1-5% plasticizers and/or F-contg. surfactants. Sprays of the compns. and water-repellent treatment by spraying them are also claimed. Thus, a fluoropolymer prep'd. from 50:20:30 \*\*\*acrylic\*\*\* acid, 2-hydroxyethyl methacrylate, and CF<sub>3</sub>(CF<sub>2</sub>)<sub>7</sub>(CH<sub>2</sub>)<sub>11</sub>O<sub>2</sub>CCH:CH<sub>2</sub> 1.0, EtOH 98.0, and di-Bu phthalate 1.0% were mixed with propellants and charged into a container to give a spray, which showed long-lasting water-repellent properties without staining textiles.

EV979440227

L# ANSWER 24 OF 104 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 2000:300379 CAPLUS  
DN 132:310506

TI Aqueous film- and foam-forming fire extinguisher  
IN Takahisa, Yukiko; Nakata, Minoru; Endo, Chiaki; Hiratsuka, Yasuyuki  
PA Daiichi Kasei Kogyo Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

PATENT NO.      KIND DATE      APPLICATION NO. DATE

---

PI JP 2000126327 A2 20000509      JP 1998-306560 19981028  
PRAI JP 1998-306560      19981028

AB The extinguisher contains polyallylamine, dimethyldiallylammonium salt-maleic acid copolymers, nonionic surfactants having \*\*\*perfluoroalkyl\*\*\* groups, amphoteric surfactants having \*\*\*perfluoroalkyl\*\*\* groups, hydrocarbon-type nonionic surfactants, and hydrocarbon-type amphoteric surfactants. The extinguisher does not have thixotropy and forms aq. film and foam to show good fire extinguishing property to both flammable oils, e.g., gasoline, and water-sol. flammable liq., e.g., alcs., ketones, ethers, amines.

IC ICM A62D001-02

DT \*\*\*Patent\*\*\*

LA Japanese

---

EV979440227

L9 ANSWER 3 OF 29 CAPLUS COPYRIGHT 2003 ACS on STN  
ACCESSION NUMBER: 2000:393004 CAPLUS  
DOCUMENT NUMBER: 133:31874  
TITLE: Antireflective agents, films for protecting polarizing  
panels and the panels  
INVENTOR(S): Nakai, Hideyuki; Takiyama, Nobuyuki; Kobayashi, Toru;  
Hasegawa, Mitsuyo  
PATENT ASSIGNEE(S): Konica Co., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000159840	A2	20000613	JP 1998-336193	19981126
PRIORITY APPLN. INFO.: JP 1998-336193 19981126				
AB The agents with good adhesion to transparent substrate surface and resistance to scratching, are obtained from F-contg. monomers selected from fluoro(cyclo)alkyl (meth)acrylates, YOOCCH:CR <sub>1</sub> COOZ [R <sub>1</sub> = H, Me; Y, Z = (F-contg.) C <sub>2</sub> -12 alkyl, (F-contg.) C <sub>4</sub> -12 cycloalkyl (provided at least either Y or Z contains F)], CH <sub>2</sub> C(COOY)CH <sub>2</sub> COOZ, or/and F-contg. esters of 4,5-dicarboxycyclohexene. Thus, coating a soln. contg. dipentaerythritol hexaacrylate 60, dipentaerythritol hexaacrylate dimer 20, dipentaerythritol hexaacrylate oligomer (.gtreq.3) 20, diethoxybenzophenone UV initiator 2, a ***silicone*** ***surfactant*** 1, Aerosil R 972 (treated fumed silica) 50, MEK 50, AcOEt 50 and i-PrOH 50 parts on the surface of a Konitac 80UVSH (cellulose triacetate) film, irradiating with UV light, coating on top with a soln. contg. 3,3,4,4,5,5,6,6-octafluorohexyl methacrylate 45, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9-heptadecafluorononylene glycol diacrylate 45, dipentaerythritol hexaacrylate 10, diethoxybenzophenone 0.2, F 177 (F-contg. ***surfactant*** ) 1, cyclohexanone 3500 and i-PrOH 7700 parts, drying and irradiating with UV light gave a coated film with reflective index 1.37, cross-cut adhesion 100/100 and good resistance to scratching.				

EV979440227

Display from CAplus

L# ANSWER 2 OF 104 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 2003:870563 CAPLUS

TI Image receptor containing \*\*\*betaine\*\*\* surfactant for thermal-transfer printing

IN Goto, Hidenori; Shimomura, Akihiro; Hatakeyama, Akira

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 31 pp.

CODEN: JKXXAF

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
------------	------	------	-----------------	------

PI	JP 2003312156	A2	20031106	JP 2002-126644	20020426
----	---------------	----	----------	----------------	----------

PRAI	JP 2002-126644		20020426		
------	----------------	--	----------	--	--

AB The image receptor, for laser-sensitive thermal-transfer printing using thermal-transfer sheet with a light-to-heat converting layer and an image-forming layer, contains .gtoreq.1 fluorobetaine surfactant

$RfL(CH_2)_nN+R_1R_2CH_2CO_2^-$  ( $Rf = C_{4-18}$  \*\*\*fluoroalkyl\*\*\* ; L = bond, divalent linkage contg. .gtoreq.1 from O, N, S, and C; n = 0-4;  $R_1-2 = C_{1-4}$  alkyl).

The receptor shows good conveyance and gives clear transferred images useful for color proof.

IC ICM B41M005-40

ICS B41M005-26

DT \*\*\*Patent\*\*\*

LA Japanese

---

EV979440227